

The Future GEOSS - A Federation of Regional Earth Observation Ecosystems

GEO NextEOS Community Activity perspectives and input to
the community hearing on the concept of GEOSS

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CONTENT

[Definitions](#)

[GEO/GEOSS](#)

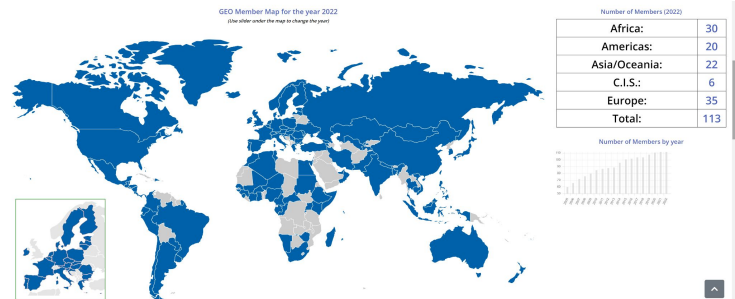
[Updated concepts](#)

[NEXT EOS](#)



- + In situ
- + All types of monitoring tools

Earth observations are data and **information** collected about our planet, whether atmospheric, oceanic or terrestrial. This includes **space-based** or remotely-sensed data, as well as ground-based or in **situ data**.



113 Member States, 140 Participating Organizations, 19 Associates, 9 Observers



A tool for identifying gaps and avoiding unnecessary overlaps along with the GEO Work Programme activities

2020-2022 GEO Work Programme

GEO Flagships
GEO Initiatives
GEO Community Activities
Regional GEOs
GEO Foundational Tasks

NEXTEOS

- GEO's Next Generation Earth Observation Services Community Activity
- **Purpose:** Promote an **interface** between different GEO communities for identifying gaps and transversal bottlenecks to the uptake of Earth observation across thematic areas, and discuss a vision and solutions for the future
- 80 members, 6 working groups (thematic communities, data, cloud platforms, interoperability, capacity building and technology transfer & sustainability)

Gap analysis

Green Paper

Position Paper

1. Introduction and Scope
2. Global Earth Observation landscape
3. **GEOSS implementation**
4. **Proposal: Foster Ecosystem**
5. Conclusions
6. Acknowledgements
7. References

Working annex: Support slides

Gaps

- The **whole value-chain** of Earth Observations includes: observations, applications, tools and services
- It requires: integration, interoperability, standardization, technology transfer and “**democratization**” of **Earth observation applications** (going from (institutional) R&D to innovation)
- Uptake by users, the market and decision-makers is significantly enabled by these end-of-chain products (AaaS)

Notes:

- ❑ GEO knowledge hub - Open science, with research-oriented goals
- ❑ Aarhus Convention: converging principles (public access to info) but not across GEO regions
- ❑ INSPIRE: Interoperability across borders, but not an example of uptake by the users/people



What is GEOSS?

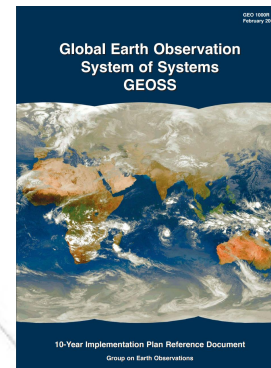
GEOSS is a set of coordinated, independent and open Earth observation collection, information and processing systems.

What does GEOSS do?

GEOSS links observing systems to strengthen monitoring of the state of the Earth, ensuring that data is accessible and interoperable.

Why does GEOSS matter?

GEOSS increases our understanding of Earth processes, and enhances predictive capabilities that underpin sound decision-making.





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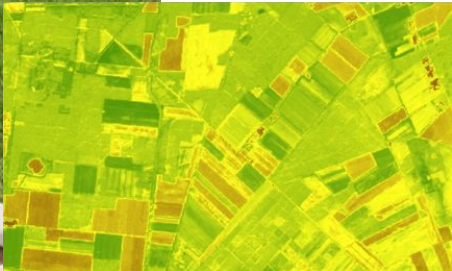
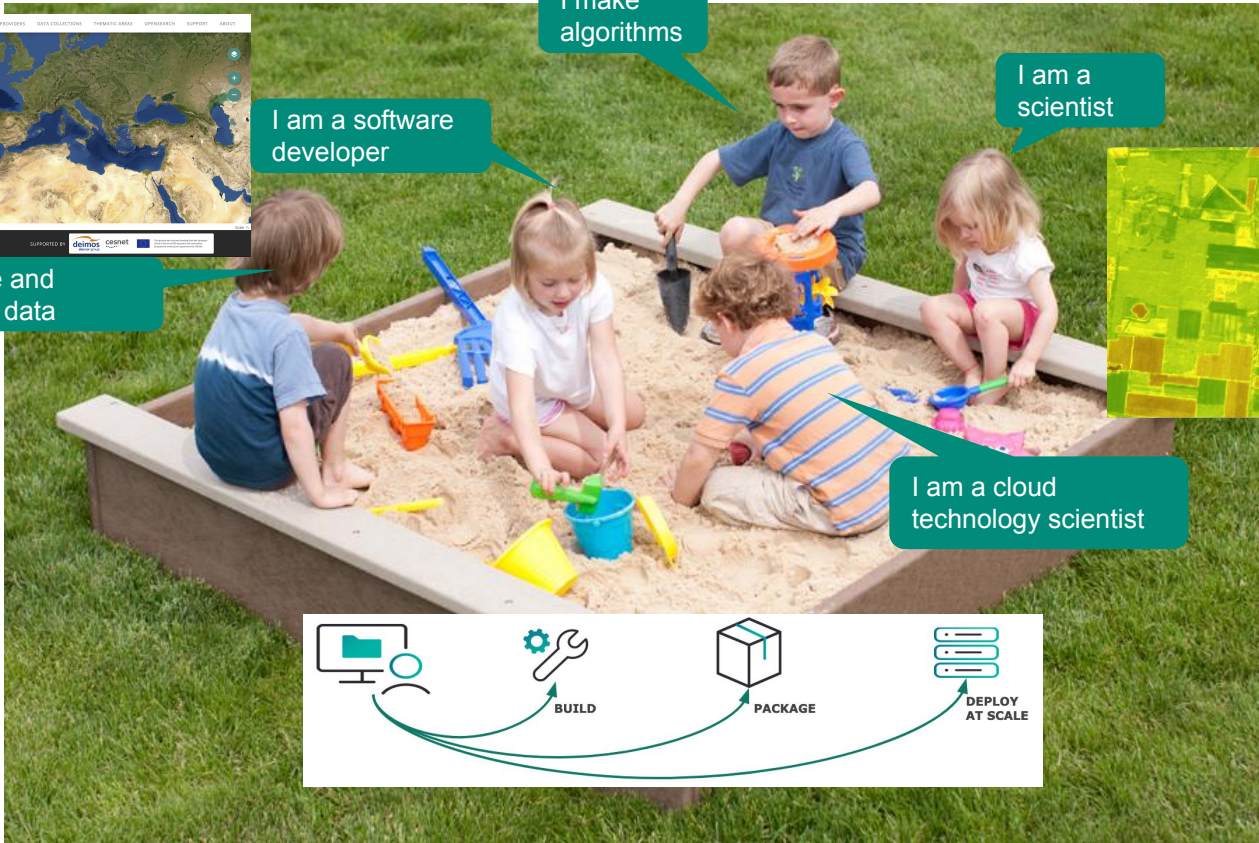
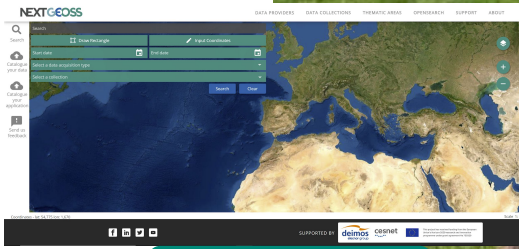


-  Discovery
-  Access
-  Encoding
-  Documentation
-  Provenance
-  Quality Control
-  Preservation
-  Verification
-  Review and Processing
-  Identifiers

- GEOSS has been focusing on **Earth Observations data** availability
- Regional catalogues are focused on **data**
- GEO data sharing and data management principles apply to data and information - **Applications and services** are not fully covered

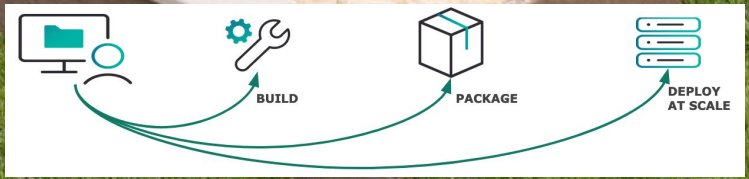
New vision

- **Going from data hubs to digital ecosystems of Earth Observation accessible and interoperable tools and services**
- **User-driven:** co-design of Earth Observation tools (increase trust of potential end-users in tools)
- Orchestrate available resources into integrated **distributed** services
- Leverage existing platforms
- **Sustainable** based on diverse funding sources - incl. the creation/exploitation of new markets (addressing the commercial value of EO)
- **GEOSS: Federation** of regional ecosystems



1+n ecosystems

Playing in the same sandbox



Afri**GO**

AO**GO**

Ameri**GO**

Euro**GO**





+



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Earth Observation Ecosystem



Earth observation ecosystem: **People**, Knowledge, Activities, Services, Applications, Processes, Systems, Data



Future interoperability

- **Purposeful** interoperability (user-driven, services customization based on easy access, standardization and integration)
- **3 levels**: Data (hubs), apps & services (ecosystem), across regions (federation)
- Implementing **GEO principles**
- Scalable services based on **co-design** with users
- Adequate **collaboration** approaches and joint **governance** between technology providers (e.g. service level agreements)

Position Paper

- ~17 meetings
- 80 NextEOS members
- 18 editors directly involved
- View: position paper for answering the call for inputs from the GEO community (Spring 2022) to inform the process of revisiting the concept of GEOSS
- Intended: detailed analysis of current gaps with examples from the Regional GEOs + concrete recommendations on the future of GEOSS development

Would you like to contribute?

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THANK YOU!

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